

CLAIMS

What is claimed is:

1. A textile having at least one adherent polyurethane backing, said backing being prepared from a polyurethane forming composition which comprises:
 - (A) a polyisocyanate and
 - (B) a mixture of a vegetable oil, a cross-linking agent comprised of a multi-functional alcohol present in a ratio to said vegetable oil such that there are at least 0.7 moles of OH groups per mole of bulk vegetable oil, a catalyst, and a blowing agent.
2. The textile of claim 1 wherein said vegetable oil is chosen from the group comprising soy oil, rapeseed oil or palm oil.
3. The textile of claim 1 wherein said vegetable oil comprises blown soy oil.
4. The textile of claim 1 wherein said catalyst is a tertiary amine.
5. The textile of claim 1 wherein the multi-functional alcohol cross-linking agent comprises a blend of ethylene glycol and 1,4 butanediol.
6. The textile of claim 1 wherein the blowing agent is selected from the group consisting of methylisobutyl ketone, acetone, water and mechanically frothed air.

7. The textile of claim 1 wherein said polyisocyanate comprises a diisocyanate and said vegetable oil comprises bulk soy oil.

8. The textile of claim 1 wherein said catalyst is present in the amount of at least 2.5 parts and said poly isocyanate (A) is present in the amount of 70 parts per 100 parts of mixture (B).

9. The textile of claim 1 wherein the polyurethane comprises the reaction product of between 70 and 85 parts of an (A) and 100 parts of (B) and wherein A comprises a diisocyanate and B comprises 100 parts of blown soy oil, between 8 to 18 parts cross-linking agent providing at least 0.7 moles of OH groups per mole of vegetable oil, 1 to 12 parts catalyst and 2 to 14 parts blowing agent.

10. The textile of claim 1 wherein the polyurethane comprises the reaction product of 70 to 85 parts of A and 100 parts of B and wherein A comprises a diisocyanate and B comprises 100 parts blown soy oil, from 8 to 16 parts cross linking agent providing 0.70 to 1.2 moles OH per mole soy oil, from 2.5 to 11 parts catalyst and from 5 to 13 parts blowing agent.

11. The textile of claim 1 wherein the polyurethane comprises the reaction product of 70 to 85 parts of A with 100 parts of B and wherein A comprises a diisocyanate and B comprises 100 parts blown soy oil, from 9 to 14 parts cross linking-agent providing 0.70 to 1.2 moles OH per mole soy oil, from 2 to 6 parts catalyst and from 4 to 9 parts blowing agent.

12. The textile of claim 1 wherein said catalyst comprises a tertiary amine.

13. The textile of claim 1 wherein said catalyst is chosen from the group comprising a mixture of 33% 1,4-diaza-bicyclo-octane and 67% dipropylene glycol; a tertiary amine blowing catalyst; and n, n', n", dimethylamino-propyl-hexahydrotriazine tertiary amine.

14. The textile of claim 1 wherein said polyisocyanate is chosen from the group consisting of 2,4 diisocyanate, 4,4 diphenylmethane diisocyanate and 2,4 diphenylmethane diisocyanate.

15. The textile of claim 1 wherein B further comprises from 2-5 parts surfactant agent for affecting foam cell size.

16. The textile of claim 1 wherein B further comprises from 7-12 parts molecular sieve agent for absorbing water.

17. The textile of claim 1 wherein said polyurethane backing has a coating weight of about 20-40 oz/sq. yd.

18. The textile of claim 1 comprising a primary backing material having a pile attached to one component thereof.

19. The textile of claim 1 comprising a floor covering.

20. The textile of claim 1 wherein a secondary textile substrate is laminated to said at least one polyurethane backing.

21. The textile of claim 20 wherein said secondary textile is a woven, non-woven or composite woven/non-woven textile.

22. The textile of claim 1 wherein said polyurethane backing comprises at least two separately applied polyurethane-forming compositions.

23. The textile of claim 22 wherein a secondary textile is laminated between said at least two polyurethane coatings

24. The textile of claim 22 wherein a secondary textile is laminated to the outermost polyurethane coating.

25. The textile of claim 23 or 24 wherein said secondary textile is a woven, non-woven or composite woven/non-woven textile.

26. A method of preparing the textile of claim 1 comprising coating a textile with at least one polyurethane forming composition which comprises:

(A) a polyisocyanate and

(B) a mixture of a vegetable oil, a cross-linking agent comprised of a multi-functional alcohol present in a ratio to said vegetable oil such that there are at least 0.7 moles of OH groups per mole of bulk vegetable oil, a catalyst, and a blowing agent.

and subjecting said at least one coating to conditions which result in the reaction of (A) and (B) to form said polyurethane

27. The method of claim 26 wherein (A) comprises a diisocyanate and (B) comprises blown soy oil, a cross-linker comprised of a multi-functional alcohol, present in a ratio with said soy oil such that there is at least 0.7 moles of OH group per mole of bulk soy oil, a catalyst and a blowing agent.

28. The method of claim 26 wherein (A) comprises a diisocyanate and (B) comprises blown soy oil, a multi-functional alcohol cross-linking agent present in such quantities that a ratio of moles of OH groups to moles of bulk soy oil is between 0.7 and 1.2 equivalent moles of OH groups to one mole of bulk soy oil, a tertiary amine catalyst and a blowing agent.

29. The method of claim 26 wherein the ratio of (A) to (B) is 70 to 85 parts to 100 parts.

30. The method of claim 26 wherein a secondary textile substrate is laminated to said at least one polyurethane backing.

31. The method of claim 26 wherein said secondary textile is a woven, non-woven or composite woven/non-woven textile.

32. The method of claim 26 wherein said polyurethane backing comprises at least two separately applied polyurethane-forming compositions.

33. The method of claim 32 wherein a secondary textile is laminated between said at least two polyurethane coatings

34. The method of claim 32 wherein a secondary textile is laminated to the outermost polyurethane coating.

35. The method of claim 32 or 33 wherein said secondary textile is a woven, non-woven or composite woven/non-woven textile.